

PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES A TRAFFIC SIGNAL RECONSTRUCTION IN CONJUNCTION WITH GEOMETRIC IMPROVEMENTS AT THE INTERSECTION OF MD 216 AND ALL SAINTS ROAD IN HOWARD COUNTY, MARYLAND. MD 216 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

II. INTERSECTION OPERATION

THE EXCLUSIVE LEFT-TURN PHASE FOR WESTBOUND MD 216 WILL CONTINUE TO OPERATE IN AN EXCLUSIVE MODE DURING EVENING-PEAK PERIOD (3:00 PM - 7:00 PM) MONDAY THRU FRIDAY AND IN A FLASHING MODE DURING ALL OTHER HOURS. THE EXISTING EASTBOUND EXCLUSIVE/PERMISSIVE LEFT-TURN PHASE WILL BE CHANGED TO EXCLUSIVE ONLY DUE TO THE NEW DOUBLE LEFT TURN CONFIGURATION.

III. SPECIAL NOTES

1. MAINTENANCE OF TRAFFIC WILL BE HANDLED BY THE CONTRACTOR UTILIZING THE FOLLOWING STANDARD PLATES PER TRAFFIC CONTROL: 104.00-13, 104.00-19, 104.00-21-104.00-24, 104.17-01, 104.17-02, 104.39-02, 104.41-0, 104.48-01, 104.48-02, 104.49-01, 104.49-02, 104.81-01, 104.81-02.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PULLING ALL CABLE TO THE CABINET AND SHALL PROPERLY LABEL EACH CABLE.
3. ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING MISS UTILITY PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.

PHASE CHART

NORMAL OPERATION

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
PHASE 1 + 5	←G	←G	←G	R	R	←G	←G	R	R	R	R	R	R	R	R	DW	DW
1 + 5 CHANGE	1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6																
PHASE 1 + 6	←G	←G	←G	G	G	←R	←R	R	R	R	R	R	R	R	R	DW	DW
1 + 6 CHANGE	←Y	←Y	←Y	Y	Y	←R	←R	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 5	←R	←R	←R	R	R	←G	←G	G	G	R	R	R	R	R	R	DW	DW
2 + 5 CHANGE	←R	←R	←R	R	R	←Y	←Y	G	G	R	R	R	R	R	R	DW	DW
PHASE 2 + 6	←R	←R	←R	G	G	←FL/R	←FL/R	G	G	R	R	R	R	R	R	DW	DW
2 + 6 CHANGE	←R	←R	←R	Y	Y	←R	←R	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 3	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	G	R	R	R	DW	DW
3 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	G	R	R	R	DW	DW
PHASE 4	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	DW	DW
4 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	DW	DW
PHASE 4 ALT.	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	WK	WK
PED. CLEARANCE	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	FL/DW	FL/DW
4 ALT. CHANGE	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	DW	DW
FLASHING OPERATION	←FL/R	←FL/R	←FL/R	FL/Y	FL/Y	←FL/R	←FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

SPECIAL OPERATION (3:00 PM - 7:00 PM) MONDAY - FRIDAY

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
PHASE 1 + 5	←G	←G	←G	R	R	←G	←G	R	R	R	R	R	R	R	R	DW	DW
1 + 5 CHANGE	1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6																
PHASE 1 + 6	←G	←G	←G	G	G	←R	←R	R	R	R	R	R	R	R	R	DW	DW
1 + 6 CHANGE	←Y	←Y	←Y	Y	Y	←R	←R	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 5	←R	←R	←R	R	R	←G	←G	G	G	R	R	R	R	R	R	DW	DW
2 + 5 CHANGE	←R	←R	←R	R	R	←Y	←Y	G	G	R	R	R	R	R	R	DW	DW
PHASE 2 + 6	←R	←R	←R	G	G	←R	←R	G	G	R	R	R	R	R	R	DW	DW
2 + 6 CHANGE	←R	←R	←R	Y	Y	←R	←R	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 3	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	G	R	R	R	DW	DW
3 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	G	R	R	R	DW	DW
PHASE 4	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	DW	DW
4 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	DW	DW
PHASE 4 ALT.	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	WK	WK
PED. CLEARANCE	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	FL/DW	FL/DW
4 ALT. CHANGE	←R	←R	←R	R	R	←R	←R	R	R	R	R	R	←G	←G	G	DW	DW
FLASHING OPERATION	←FL/R	←FL/R	←FL/R	FL/Y	FL/Y	←FL/R	←FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE STATE HIGHWAY ADMINISTRATION  
NONE

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

QUANTITY	UNITS	SPECIFICATION SECTION	DESCRIPTION
LS	LS	104	Maintenance of Traffic.
LS	LS	108	Mobilization.
46	EA	814	Furnish and install 12 in. vehicular signal head section
6	EA	814	Furnish and install 8 in. vehicular signal head section.
1	EA	816	Furnish and install control and distribution equipment for underground power feed.
2	EA	817	Furnish and install pedestrian push button and R(0-40) sign. Sign to read "Push Button to Cross Scaggsville Rd"
1	EA	818	Furnish and install 10ft. pedestal pole.
175	SF	813	Furnish sheet aluminum signs consisting of: 2 ea. D-3(1)(Dual faced) 16"xVAR 2 ea. R(0-40) 9"x12" 5 ea. R3-5(L) 30"x36" 1 ea. R3-6(L) 30"x36" 1 ea. R(0-12)(4) 36"x42" 1 ea. W9-2(4) 30"x48" 1 ea. Shield Assem. 54"x51" 2 ea. Shield Assem. 48"x75" 1 ea. Shield Assem. 30"x51"

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. JOHN CONCANNON  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: (301) 624-8140

MR. JIM BUCKALEW  
DISTRICT UTILITIES ENGINEER  
PHONE: (301) 624-8115

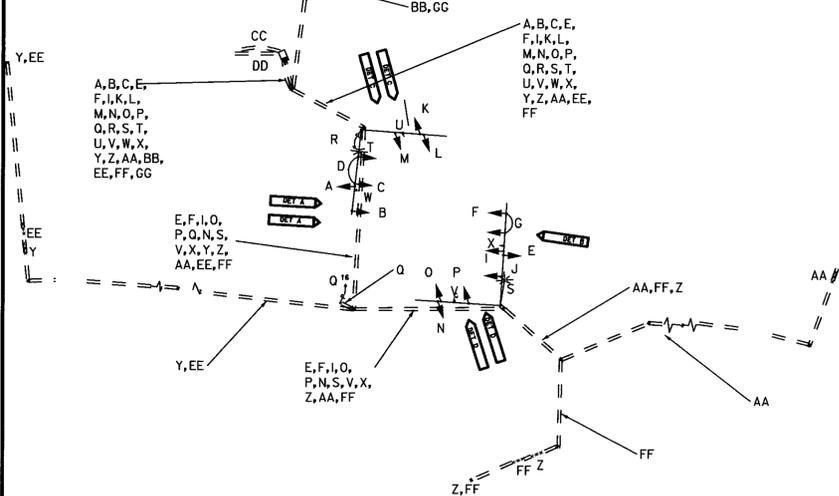
MR. DAVE COYNE  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
PHONE: (301) 624-8105

MR. RICHARD L. DUFF, SR.  
CHIEF, TRAFFIC OPERATIONS DIVISION  
PHONE: (410) 787-7630

WIRING LEGEND

- A,B,C,D, E,F,G,I, J,K,L,P, Q,R 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
- K,M,N,O 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
- S,T 2 CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG) TRAY CABLE FOR LUMINAIRE
- U,V,W,X VIDEO DETECTION CABLE
- Y,Z,AA, BB,EE, FF,GG MICROLOOP CABLE
- CC 1 CONDUCTOR ELECTRICAL CABLE (NO. 8 AWG) FOR POWER
- DD CABLE FOR PHONE SERVICE
- GW STANDARD BARE COPPER GROUND WIRE (NO. 6 AWG)

WIRING DIAGRAM



EQUIPMENT LIST "B" (cont.)

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

QUANTITY	UNITS	SPECIFICATION SECTION	DESCRIPTION
3	CY	205	Test pit excavation.
13	CY	801	Furnish and install concrete for signal foundation.
1	EA	818	Furnish and install 27' steel pole with twin 50'/60' mast arms (anchor bolts 2" x 90').
1	EA	818	Furnish and install 27' steel pole with twin 50'/60' mast arms (anchor bolts 2" x 90').
1	EA	816	Furnish and install Econalite size 6 base mounted cabinet, complete with ASC II controller, telemetry module, and all necessary auxiliary equipment for system operation, including video interface panel (to be connected by SHA).
2	EA	814	Furnish and install 12 in. one way, 2 section (symbolic WALK/DON'T WALK) black-faced aluminum signal head, pole mount
120	LF	810	Furnish and install 2 conductor electrical cable (NO. 14 A.W.G.) (tray cable for luminaire)
50	LF	810	Furnish and install 1 conductor electrical cable (No. 8 AWG) (for power).
2000	LF	810	Furnish and install 5 conductor electrical cable (No. 14 AWG).
1700	LF	810	Furnish and install 7 conductor electrical cable (No. 14 AWG).
300	LF	810	Furnish and install stranded bare copper ground wire (#6 AWG)
1	EA	808	Furnish and install 15 ft lighting arm on signal pole.
1	EA	808	Furnish and install 10 ft lighting arm on signal pole.
2	EA	806	Furnish and install 250 watt HPS luminaire with photocell.
14	EA	811	Furnish and install electrical handhole.
50	LF	805	Furnish and install 3 in. schedule 80 rigid PVC conduit (trenched).
100	LF	805	Furnish and install 4 in. schedule 80 rigid PVC conduit (trenched).
1300	LF	805	Furnish and install 2 in. schedule 80 rigid PVC conduit (trenched).
400	LF	805	Furnish and install 3 in. schedule 80 rigid PVC conduit (bored).
400	LF	805	Furnish and install 4 in. schedule 80 rigid PVC conduit (bored).
3	EA	800	Furnish and install non-invasive probe with 1000' lead in
4	EA	800	Furnish and install non-invasive probe with 500' lead in
LS	LS	SP	Remove and dispose of existing signal equipment.
6	EA	804	Furnish and install ground rod - 3/4 in. diameter X 10 ft.
4	EA	800	Furnish and install video detection camera with arm and clamp.
16	EA	803	Furnish and install overhead sign.
2	EA	800	Furnish and install 500' video cable for detection unit
2	EA	800	Furnish and install 250' video cable for detection unit

EQUIPMENT LIST "C"

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076.

QUANTITY	DESCRIPTION
1	SHA SIGNAL FORCES SHALL REMOVE THE CONTROLLER AND ALL INCIDENTAL EQUIPMENT. THE CONTRACTOR SHALL REMOVE THE CABINET AFTER ALL INTERNAL EQUIPMENT HAS BEEN REMOVED

- NOTES:
1. ALL MATERIALS TO BE REMOVED AND NOT LISTED ABOVE SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
  2. THE CONTRACTOR SHALL NOTIFY THE SHA AT (410) 787-7652 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

**WELLS & ASSOCIATES, LLC**  
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS  
1420 Spring Hill Rd., Suite 600  
McLean, VA 22102  
Phone: (703) 917-6620 Fax: (703) 917-0739  
170 Jennifer Rd., Suite 260  
Annapolis, MD 21401  
Phone: (301) 970-2402 Fax: (410) 266-9189

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDITIONAL LEFT TURN LANE ON EASTBOUND MD 216 UPGRADE FROM STRAIN TO BAST ARM SIGNAL SYSTEM	05/03
2	MODIFY LEFT-TURN PHASING ON MD 216 AND SPLIT ALL SAINTS ROAD	9/98
3	ADD E/P PHASING ON MD 216	3/82

**MARYLAND DOT - STATE HIGHWAY ADMINISTRATION**  
*Office of Traffic & Safety*  
**TRAFFIC ENGINEERING DESIGN DIVISION**  
**TRAFFIC SIGNAL RECONSTRUCTION PLAN**  
**MD 216 AND ALL SAINTS ROAD**

DRAWN BY: WTG	F.A.P. NO. N/A	TS NO. TS-1004
CHECKED BY: LES	S.H.A. NO. PERMIT B-HO-7794-00	T.I.M.S. NO. F355
SCALE: NTS	COUNTY: HOWARD	SHEET NO. 81 OF 91
DATE: 05/27/03	LOG MILE: 130021600.4	